Chapter 5 INFRASTRUCTURE

5.1 WATER

5.1.1 Existing Supply and Sources

The Long Beach Water Department receives its drinking water from two sources, the large underground aquifer below the City of Long Beach known as the Central Basin, and from imported water delivered by the Metropolitan Water District (MWD) of Southern California. A small portion of the City's supply comes from reclaimed water, which is primarily used to irrigate large municipal landscapes.

Forty-two percent of the City's total water supply is provided by groundwater. Rain and snowmelt from the San Gabriel Mountains watershed travel through washes and creeks into the San Gabriel River and the Whittier Narrows Basin. From there, it percolates underground through sand and water beds where it begins a lengthy subsurface journey to the Central Basin aquifer and ultimately to the City of Long Beach. Pumps extract this groundwater from twenty-six different wells and deliver it to the Water Department's groundwater treatment plant.

Fifty percent of the City's total water supply is treated and provided by the MWD. The MWD is a consortium of twenty-six cities and water districts responsible for delivering water to nearly 17 million people in a 5,200-square-mile area of Southern California. The City of Long Beach is one of MWD's original member agencies. The MWD transports water from the Sacramento Delta in northern California, via the California Aqueduct, and from the Colorado River, via the Colorado River Aqueduct, to its customers in southern California. The majority of water Long Beach receives from the MWD is Colorado River Water.

The California Aqueduct, also known as the State Water Project, is an intricate network of dams, pumping plants, reservoirs, hydroelectric plants, the Sacramento and San Joaquin Rivers, and nearly 440 miles of aqueduct that carry water to several southern California reservoirs. The Colorado River Aqueduct is a 242-mile-long system that provides a billion gallons of water a day to residents and businesses in Southern California's coastal plain. Water is taken in at Lake Havasu and carried across the Mojave Desert to the reservoir facilities at Lake Matthews where it awaits disbursement to Southern California communities.

The final eight-percent of the City's total water supply is reclaimed water. Reclaimed water is wastewater that has been fully treated by a three stage tertiary process for industrial and irrigation uses within the City of Long Beach. Reclaimed water is used for irrigation of the City's parks, golf courses, cemeteries, gardens, and nurseries. Other

users include the California State University of Long Beach, Long Beach City College, the Long Beach Unified Schools District, and Caltrans for sites along the I-405 and I-605 Freeways. THUMS, a collaboration of oil producers operating four offshore oil islands, is also a user of reclaimed water.

Long Beach groundwater goes through a sophisticated multi-stage treatment process at the Water Department Groundwater Treatment Plant, which is among the largest of its kind in the United States. In the 2001/02 Fiscal Year, the Long Beach Groundwater Treatment Plant processed over 11 billion gallons of drinking water—nearly half the city's annual water demand. Overall, more than 25 billion gallons of high quality water were delivered to the Long Beach community. Water is treated at the plant, then delivered to the Department's large, fully secure, Alamitos Reservoir Facility, where it is then distributed to Long Beach homes and businesses. Located at the Groundwater Treatment Plant is the nation's first, municipal, state-of-the-art water bottling plant. The bottling plant is used for City emergencies, and for civic and charitable events. This Fiscal Year, the Water Department bottled nearly 275,000 bottles of water and distributed 202,300 bottles for use throughout the City of Long Beach.

5.1.2 Future Needs

A strategic part of the Long Beach Water Department's long-term water supply reliability plan for the City is to further develop an exciting new technology to convert seawater into high-quality drinking water in the most-cost effective manner. Known as "The Long Beach Method," this two-stage nanofiltration process is 20 to 30 percent more energy-efficient than other more widely used desalination methods, a major breakthrough that promises to significantly cut costs and make desalination a viable element in creating more high quality and reliable water supplies for the future. On September 9, 2002, the Long Beach Water Department signed a cost-sharing agreement with the United States Bureau of Reclamation to build a $5.3 million prototype facility at the Los Angeles Department of Water and Power's Haynes Generation Station located in southeast Long Beach. The prototype facility will act as a research and development facility, perfecting an environmentally sound seawater desalination process that could, before the end of the decade, be used in larger full-scale facilities placed up and down the California coast helping to maintain rate affordability and supply reliability.

The Long Beach Water Department has completed work on one of the most significant water supply reliability improvement agreements in recent memory. Partnering with the Central Basin Municipal Water District, the Metropolitan Water District of Southern California (MWD), and the California Department of Water Resources (DWR), the Water Department will implement the Long Beach Conjunctive Use Project. This innovative and environmentally responsible groundwater storage project will provide up to 1.4 billion gallons of additional water for the Long Beach area during drought years. This project will allow the Department to maximize the use of the Central Groundwater Basin that runs under the city of Long Beach, strengthening water supply reliability while maintaining water rate affordability. The Long Beach Water Department has secured a $4.5 million grant from the State of California for the project, 100 percent of the projects total cost. The Long Beach Conjunctive Use Project will capture excess water during

wet years and store it in the Central Groundwater Basin for use in dry years. The project is the first of its kind in Southern California to receive Proposition 13 funding.

Long Beach Water Department conservation efforts save billions of gallons of water annually, keeping water rates affordable. Millions of dollars are saved each year due to our use of reclaimed water and many incentive-based conservation programs. In fact, though the population of the city has increased, water use has decreased. Without reclamation and conservation the city would be using nearly 20 percent more water than it currently uses today. This translates into significant savings for our customers, and a major benefit for our precious environment. This Fiscal Year the Department delivered 5,493 acre-feet of reclaimed water to many of the parks, golf courses, athletic fields, and cemeteries located throughout the city. Planning is underway to expand the reach of the reclaimed water distribution system so that this inexpensive water can be utilized by most of the City's large public landscapes. This year, the Department completed design of a $5 million reclaimed water expansion project. Funding for this expansion is made possible by grants from the Federal and State government. The Department also offers its customers huge rebates on the purchase of state-of-the-art, ultra low flush toilets and high efficiency clothes washers. This Fiscal Year, over 4,000 toilets and nearly 250 high efficiency clothes washers were purchased by Long Beach customers. Over 8,000 water conserving showerheads and other low-flow devices were also distributed by the Department's employees and Water Ambassadors.

After almost a century of use, much of our City's water and sewer infrastructure is nearing the end of its useful service life. The City's water distribution system is made up of nearly 915 miles of water mains with 88,755 service connections. This Fiscal Year, the Water Department continued to implement one of the most aggressive cast-iron water main replacement programs in the United States, replacing or lining nearly 107,000 linear feet of outdated water mains throughout the city. The Long Beach Water Department is also responsible for over 765 miles of sanitary sewer mains that run through the city of Long Beach. During the year, utilizing state-of-the-art video equipment, the Department televised nearly 84,000 linear feet of sewer mains and laterals, leading to the replacement of 1,324 linear feet. This cutting-edge equipment is used by the Department to efficiently locate sewer mainline and lateral repair needs without undertaking otherwise very expensive and disruptive street excavation. In addition, nearly 2.1 million feet of mains and laterals throughout the city were thoroughly cleaned. The Water Department completed its third full-year of the City's Tree-Root Intrusion Program, repairing nearly 291 private sewer lines damaged by the roots of City trees. In the 2001/02 Fiscal Year the Department spent nearly $900,000 on the program.

5.2 RECYCLED/RECLAIMED WATER

5.2.1 Existing System and Need

In 1978, the Long Beach Water Department (LBWD) started a water reuse program by extending the irrigation system at Long Beach Water Reclamation Plant (LBWRP). By

2002, 5,500 acre-feet per year (AFY) of reclaimed water was being supplied to 27 customers.

LBWRP has a current capacity of 25 million gallons per day (MGD), and currently treats flows that average about 21 MGD. During its diurnal flow patterns, peak flows have been recorded at over 35 MGD. Only about 30% of the plants effluent is currently reused. The effluent undergoes treatment, which includes primary sedimentation, activated sludge biological treatment, secondary sedimentation, coagulation, filtration, and chlorination.

In 1992, Black and Veatch prepared a master plan, identifying 141 potential new customers with an aggregate demand of 35,000 AFY. The potential users were divided into 13 geographic clusters. The Alamitos and Dominguez Barriers were identified as major potential users. Three different distribution system alternatives were evaluated. Black and Veatch recommended the alternative, which would supply reclaimed water to existing customers and new customers inside Long Beach including Alamitos Barrier.

Based on the recommendations of the 1991 Master Plan, LBWD initiated the Recycled Water System Expansion Plan Phase 1 to extend the existing system to meet the near-term demand. Some of the proposed work under the Phase 1 Project, including pipeline construction and converting two existing potable water reservoirs to recycled water, is already completed, while the remaining work is planned to be completed by the year 2006.

At present, recycled water system serves two pressure zones with 30 miles of pipelines ranging from 8 to 36 inches in diameter. There are three pumping stations, two recycled water storage tanks of 6.6 MG, and two open storage lakes. One pumping station is at the Long Beach WRP, a second pumping station is at the open storage lake at the Lakewood Golf Course. The third pumping station is located in El Dorado Park and is reserved for pumping groundwater into the system when needed. The two recycled water tanks are at the Alamitos Hill Reservoir site.

The remaining work to be completed under Phase 1 Expansion:

- *Phase 1C Expansion*—Upgrades to LBWRP Pump Station. The project is currently under phase and the construction is expected to be commenced in April 2003.
- *Phase 1D Expansion*—Construction of transmission mains in Clark Avenue, Stearns Street, and Redondo Avenue in Long Beach. The project is currently under construction. Construction is expected to be competed in August 2003.
- *Phase 1 Contract 2*—Construction of pipeline in Clark between Stearns Street and Atherton Street. Project is planned to be completed by August 2006.

5.2.2 Future Improvements

With increased demands for reclaimed water, several methods are available should the LBWRP fail to meet demands during peak hours, including off site storage and use of untreated groundwater. LBWD uses groundwater for its potable water supply after

treatment. Untreated ground water from the wells can supplement the recycled water system as needed to satisfy peak demands. This system exists with a pump station at El Dorado Park, which can supply untreated groundwater to the system.

A preliminary Recycled Water Master Plan Update by Montgomery Watson Harza in October 2002 evaluated the current and near-term operating conditions of the Recycled Water System, status of the Recycled Water Supply, and included a survey of potential additional customers. The main conclusion of the study is that the system can serve the existing customers but it has little or no excess capacity. Therefore, the existing distribution system does not have sufficient capacity to serve the Alamitos Barrier WRP, which is planned to come on-line in mid-year 2003 and will add 3.6 mgd demand.

The study found that the available recycled water supply from the Long Beach WRP is sufficient to meet the currently-known customer demands. However, because the Long Beach WRP has no recycled water storage reservoir, the LBWD system needs additional storage in the system to compensate for the diurnal variations in supply versus the demand usage.

In conducting a survey of potential customers, the study examined the volume of water that could be converted from potable water to recycled water use, the largest six potential customers comprise 60 percent of potential volume and the largest sixteen potential customers consist of 80 percent of the potential volume. Therefore, it is prudent for LBWD to focus on converting the large industrial water users from potable water to recycled water—these are mainly power plants (for use in cooling towers and boilers), commercial laundries, and oil well injection.

As a result of the Montgomery Watson Harza study the LBWD proposes Phase 2, 3, and 4 of the Recycled Water Expansion Project to meet the future recycled water demand:

- *Phase 2*—Construct approximately 2 miles of transmission mains and 8 miles of service lines to connect the Haynes Power Plant, AES Southland, LLC, and El Dorado Golf Course in the Southwest portion of the City.
- *Phase 3*—Construct up to two new recycled water reservoirs, construct a second pump station at Long Beach WRP, and/or a booster pump station at Alamitos Reservoir site located in the vicinity of Redondo Avenue and Pacific Coast Highway.
- *Phase 4A*—Construct approximately 5 miles of transmission mains and 3 miles of service lines from Obispo Avenue to Port of Long Beach.
- *Phase 4B*—Construct approximately 6 miles of transmission mains and 5 miles of service lines from Broadway to Wardlow Road to Walnut Avenue.

Phases 2, 3, and 4 of the Recycled Water Expansion Project are scheduled to occur between 2005 and 2008.

5.3 SANITARY SEWER

5.3.1 Existing Conditions

In February 1988, the Department assumed the responsibility of the various functions of the City's sanitary sewer system, including operations and maintenance. Later, in April 1990, the citizens of Long Beach passed a City Charter amendment that allowed greater autonomy for the Department in administering the City's sanitary sewer operations.

The Department has made considerable progress since 1988 in addressing the substantial challenges posed by an aging infrastructure, much of which is between 60 and 80 years old. The first Citywide Sewer Master Plan, developed by the Department, provides a prioritization of the sewer deficiencies that must be addressed. During the year, utilizing state-of-the-art video equipment, the Department televised 74,855 feet of sewer mains and laterals. This equipment provides the ability to locate sewer mainline and lateral repair needs without undertaking otherwise very expensive street excavation to pinpoint problems.

This year we completed 291 sewer lateral and 51 sewer main pipeline repair jobs, chemically treated 3,501 of the 15,595 sewer manholes to control vectors (including roaches, other insects and rodents), and cleaned 291 of the 718 miles of sewer pipelines throughout the City.

The Long Beach Water Department operates and maintains nearly 765 miles of sanitary sewer line, safely and expeditiously delivering over 40 million gallons per day to Los Angeles County Sanitation facilities located on the north and south sides of the City of Long Beach. From these facilities, treated sewage will be used in one of three ways. 1) It will be used to irrigate parks, golf courses, cemeteries, and athletic fields, 2) It will be used to recharge our groundwater basin, and 3) It will be pumped into the Pacific Ocean.

Long Beach's sanitary sewer system carries water from toilets, showers, sinks, and dish and clothes washers away from your home. In fact, most of the water you use in your home is put into the sanitary sewer system. Currently, a majority of the City's wastewater is delivered to the Joint Water Pollution Control Plant (JWPCP) of the Los Angeles County Sanitation District. The remaining portion of the City's wastewater is delivered to the Long Beach Water Reclamation Plant of the Los Angeles County Sanitation District.

JWPCP is located at 24501 S. Figueroa Street, Carson, California. The plant occupies approximately 350 acres to the east of the Harbor (110) Freeway. The JWPCP is the largest of the Los Angeles County Sanitation Districts' wastewater treatment plants. It provides advanced primary and partial secondary treatment for 350 million gallons of wastewater per day. The plant serves a population of approximately 3.5 million people, including most of the 460,000 residents of the City of Long Beach. At JWPCP, the treated wastewater is disinfected with chlorine and sent to the Pacific Ocean through

networks of outfalls that extend two miles off the Palos Verdes Peninsula to a depth of 200 feet.

The Long Beach Water Reclamation Plant is located at 7400 E. Willow Street in Long Beach. The plant occupies 17 acres west of the San Gabriel River (I-605) Freeway. The plant provides primary, secondary, and tertiary treatment for 25 million gallons of wastewater per day. The plant serves a population of approximately 250,000 people, including a portion of the 460,000 residents of Long Beach. Almost 5 million gallons per day of the purified water is reused at over forty reuse sites.

5.4 FLOOD CONTROL / STORMWATER

5.4.1 Existing Conditions

The Long Beach Stormwater system outlets to the following regional drains: Los Angeles River, San Gabriel River, Coyote Creek, Los Cerritos Channel, Heather Channel, Los Cerritos Line E, and the Artesia-Norwalk Drain.

The City of Long Beach was divided into thirty major drainage basins. Within each major basin there are sub-basins for major drains 36 inches in diameter or larger that have their outfall to a regional drain, regional retention basin or the Harbor. Many major basins contain two or more sub-basins. The sub-basins are further sub-divided into drainage areas contributing runoff to a drainage node.

There are five storm waste storage basins for Long Beach: Dominguez Basin, Dominguez Gap Basin, California Bowl, Hamilton Bowl, and Colorado Lagoon.

There are over 40 stormwater pump stations in Long Beach. Most of the larger capacity stations outfall to the Los Angeles River.

5.4.2 Regulatory Setting

Clean Water Act

The objective of the federal Clean Water Act (CWA) is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Section 402(p) of the CWA, as amended by the Water Quality Act of 1987, requires NPDES permits for stormwater discharges from municipal separate storm sewers (MS4s) to waters of the United States. Section 402(p)(3)(B) requires that permits for MS4s: "*(i)* may be issued on a system—or jurisdiction-wide basis; *(ii)* shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers; and *(iii)* shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants."

The objectives of this program are to effectively prohibit non-stormwater discharges and to reduce the discharge of pollutants to the maximum extent practicable (MEP) such that these discharges will not adversely impact the beneficial uses of our receiving waters. Essentially, the City's ultimate objective is to comply with the federal Clean Water Act and the state Porter-Cologne Water Quality Control Act. To meet these objectives, the City is fully implementing the Long Beach Stormwater Management Program (LBSWMP).

NPDES

The City of Long Beach has been issued a NPDES Permit from Los Angeles County. The permit has special conditions and mitigation, which apply to all demolition, excavation, and construction projects. These conditions control storm runoff and protect against erosion and contamination.

5.5 TELECOMMUNICATIONS

5.5.1 Existing Conditions—City of Long Beach

Current telecommunications services include the following:

- Telephone service provided by Verizon
- Cable Television service provided by Charter Communications
- Internet service is available from various Internet Service Providers
- Cellular phone service is available from numerous carriers

Each of the telecommunication providers available in the City of Long Beach offers a variety of plans and services to residential and commercial customers.

Telephone Service

Local telephone service is provided by Verizon. Long Distance service is available from a number of carriers.

Cable Television Service

The City has a franchise agreement with Charter Communications to provide Cable Television Services to the City.

Internet Service

City residents have many options when choosing an internet service provider. A number of dial-up providers offer service. Additionally, Verizon and Charter Communications off high-speed DSL and Cable-Modem service respectively.

Cellular Phone Service

A number of cellular phone providers offer service within the City of Long Beach. Cellular phone service companies are licensed and regulated by the State of California Public Utilities Commission (CPUC). The City regulates the location of transmission antennas and through the Zoning Chapter of the Municipal Code.

5.6 SOLID WASTE

5.6.1 Regulatory Context

The State Legislature, through Assembly Bill 939 (AB939), the California Integrated Waste Management Act of 1989, mandated that all cities and counties prepare, adopt, and submit a comprehensive solid waste management plan to the State for aggregation and analysis. The County of Los Angeles prepares a countywide plan that includes the Planning Area. The plan must address and detail each individual community's efforts and intended policies in the areas of waste characterization, source reduction, recycling, composting, solid waste facilities, education/public information, funding, special wastes, and hazardous wastes. The law also mandates that communities meet certain specific identified targets for waste reduction and recycling over specified time periods (25 percent by 1995 and 50 percent by the year 2000).

5.6.2 Existing Setting

Solid Waste Generation

According to the California Integrated Waste Management Board (CIWMB), household disposal comprises 35 percent of the City of Long Beach waste stream and commercial/industrial disposal comprises 65 percent of the waste stream.[1] Residents of Long Beach generated three pounds of refuse per resident per day in 2000 (the most recent year for which data are available), while businesses generated 17.5 pounds per employee per day. The largest percentages of both the residential and commercial waste streams were organic materials (45 percent for residential and 32.6 percent for businesses) and paper (27.5 percent for residential and 34.7 percent for businesses).

Waste Diversion: Source Reduction and Recycling

The City has a number of programs for diverting material from disposal, ranging from curbside recycling collection to composting workshops to business assistance. These programs have resulted in increased annual diversion, with CIWMB Board-reviewed diversion rates of 21 percent in 1995, 33 percent in 1998, and 55 percent in 2000.[2]

[1] California Integrated Waste Management Board: Jurisdiction Profile for the City of Long Beach; www.ciwmb.ca.gov/Profiles/Juri.

[2] Ibid.

Residential Refuse Collection

The City of Long Beach provides weekly refuse collection to all residential utility accounts within the City. Certain multi-family residences are considered commercial accounts and are addressed under Commercial and Industrial Refuse Collection, below. As of January 2004, approximately 70 percent of the approximately 118,000 residential accounts were provided with City-owned carts for automated refuse collection. Carts are available in 64-gallon, 96-gallon, and 300-gallon capacity. Refuse service charges reflect the number and size of carts: the greater the refuse capacity, the higher the fee. This system provides an incentive for residents to limit the amount of refuse for disposal.

The remaining 30 percent of residential accounts provide their own refuse receptacles. These accounts are collected manually.

The City provides two free special collections per year to enable residents to dispose of oversized items, furniture, electronics, appliances, tires, tree limbs, etc. These special collections are individually scheduled on a call-in basis, and additional special collections can be scheduled for a fee.

Approximately 218,000 tons of refuse were collected from residential accounts in 2002.

Commercial and Industrial Refuse Collection

The City provides commercial and industrial refuse collection, which includes certain multi-family residential. Commercial and industrial accounts are required by municipal code to utilize municipal refuse collection. However, commercial and industrial accounts that meet a certain threshold for waste generation may request to be exempted from this requirement. An account that has received such an exemption may contract with a private refuse hauler that is permitted to convey waste within the City. Approximately 5,000 commercial and industrial accounts utilize City refuse service.

Approximately 235,000 tons of refuse were collected from commercial and industrial accounts in 2003. Of that amount, 9,000 tons were collected by the City, and 226,000 tons were collected by private haulers.

5.6.3 Recycling

Curbside collection

The City has provided curbside residential collection of recyclable materials since 1992. Residents were originally provided with rectangular 18-gallon purple bins for the manual collection of commingled recycling. In 2003, the City began distributing wheeled carts for automated recycling collection. The manual recycling collection program was provided to all single-family residences and multi-family residences up to 10 units. Larger apartment buildings and nonresidential accounts were not eligible for curbside

recycling collection. The automated recycling program removes this restriction and includes all City-serviced refuse accounts.

Carts are available in 32-gallon, 64-gallon, and 96-gallon capacity. Unlike the variable rates charged for refuse, a flat recycling charge is included in refuse fees. The variable rate for refuse, combined with the flat rate for recycling, is intended to provide an incentive to recycle more and dispose of less.

The materials currently accepted for recycling are corrugated cardboard, newspaper, paperboard (such as tissue & cereal boxes), mixed paper, glass (bottles & jars), cans (aluminum, tin, or bi-metal), plastics (beverage containers marked with numbers 1 or 2, and all containers marked with numbers 3 or 4), plastic grocery and dry cleaner bags, waxed paper milk cartons, juice boxes, empty paint cans, empty aerosol cans, motor oil, and oil filters.

The City contracts with Waste Management, Inc. (WMI) for recycling collection. Approximately 17,000 tons of recyclable materials were collected from residential accounts in 2003. In addition, private haulers collected approximately 81,000 tons of material to be recycled from commercial and industrial accounts. This includes construction and demolition debris.

Recycling Centers

There are a number of locations throughout the City that accept recyclable materials. Some of these recycling centers offer payment for certain materials, some have charges for accepting certain materials (see Greenwaste, below), and some simply accept materials from the public with no fee or charge. Most recycling centers in the City are certified by the California Department of Conservation, Division of Recycling.

5.6.4 Private Haulers

Any person or company that intends to convey refuse for hire within the City must first obtain a Refuse Transportation Permit. Permitted haulers are required to submit an AB 939 report to the City on a monthly basis, reporting their gross receipts from refuse, recycling, and roll-off (dumpster) routes. Permitted haulers are also required to report their collected tonnage and tonnage of materials diverted from disposal. Permit fees include an AB 939 fee, which is a flat percentage of gross receipts, plus a recycling fee, which is a percentage of gross receipts that varies with the amount of diversion. The higher the diversion, the lower the recycling fee. There are currently 22 permitted private haulers in Long Beach.

5.6.5 Household Hazardous and Electronics Waste

The County of Los Angeles provides free Household Hazardous and Electronics Waste collections three or four times per month at locations throughout the County. The County schedules a collection in Long Beach approximately once per year. The County also operates four permanent hazardous and electronics waste drop-off locations. The

closest drop-off location to Long Beach is in San Pedro. County collections are available to residents only (waste from businesses is not accepted). The City will also pick up electronics waste as part of a special collection (see Residential Refuse Collection, above).

Used motor oil and motor oil filters are accepted in the City's curbside recycling program. In addition, there are a number of private hazardous materials clean-up and disposal companies in Long Beach and adjacent Signal Hill.

5.6.6 Greenwaste

Residential greenwaste is collected with refuse. The City encourages residents to recycle their greenwaste on-site by composting and grasscycling, providing educational materials and workshops to residents, schools, and any other interested parties or groups. The City sells composting bins at wholesale prices. There is a transfer station in the City that accepts greenwaste for a fee. The City encourages residents to recycle their Christmas trees by providing drop-off locations throughout the City and also picking up trees set out on the curb on a designated Saturday in January.

Commercial landscapers are encouraged to keep greenwaste free of contamination so they can take advantage of lower tipping fees for clean greenwaste at transfer stations and Los Angeles County landfills. Approximately 5,200 tons of greenwaste generated in Long Beach were used as alternative daily cover at area landfills.[3]

5.6.7 Construction and Demolition Debris

Source-separated construction and demolition (C&D) debris is collected by private haulers in Long Beach. While private haulers are required to report their waste collection and diversion tonnages, they are not required to report the material composition of their diversion tonnage. Because of this, the City has no data regarding the percentage of privately collected waste that is C&D. The CIWMB estimates that 7.9 percent of commercial waste is C&D.[4] Applying this to the total tonnage collected by private haulers, an estimated 17,900 tons of C&D debris were generated in Long Beach in 2002 (the most recent year for which data are available).

5.6.8 Disposal

Most refuse from the City of Long Beach is disposed of at the Southeast Resource Recovery Facility (SERRF) or at Puente Hills Landfill. Smaller amounts of waste are disposed of at landfills in Los Angeles, Orange, San Bernardino, and Kern Counties.

[3] ibid.
[4] ibid.

SERRF

SERRF is a publicly owned solid waste management facility that uses mass burn technology to reduce the volume of solid waste by approximately 80 percent, while recovering electrical energy. SERRF is located in the City of Long Beach and is permitted as a transformation facility. SERRF is permitted to accept 2,240 tons of waste per day and accepts an average of 1,500 tons per day. SERRF recycles approximately 825 tons of ferrous metals per month, and treated combustion ash is used at Puente Hills landfill as road base material. Approximately 241,000 tons of waste from Long Beach was disposed of at SERRF in 2000.[5]

Puente Hills

Puente Hills is a permitted Class III solid waste landfill. Puente Hills is located in Whittier and is owned and operated by the Sanitation Districts of Los Angeles County. Puente Hills has a permitted capacity of 13,200 tons per day, with a remaining capacity (as of October 1, 2001) of 20,200,000 cubic yards.[6]

[5] ibid.

[6] California Integrated Waste Management Board: Facility/Site Summary Details; www.ciwmb.ca.gov/swis